

SWITCHED ON

How embracing technology created a safer environment for colleagues – and saved nearly half a million pounds in the process

➔ At the flick of a switch, London North Eastern and East Midlands' (LNE & EM) Works Delivery off-track team were able to solve a trio of problems linked to their need to install cable routes at Hebden Bridge, West Yorkshire.

The project, part of the Huddersfield to Bradford re-signalling scheme, required troughing to be replaced and upgraded. Track access, efficiency and safety were top of the agenda.

The complications

Gerald O'Donnell, scheme project manager, said: "The Hebden Bridge work was a 12-week programme that required the up and down lines to be blocked individually and, at times, simultaneously. But a possession on the line can only be granted once every six weeks. Line blockages were used to

allow these works to be carried out on mid-week nights. To complicate matters further, a third converging branch line had to be blocked at times, which required extra protection arrangements.

"The movement of the troughing from the site access point to the worksite requires the use of a track trolley, and therefore additional protection."

Track access was at a premium and there were three major projects taking place at the same time, all competing to be on track.

"We wanted to remove the risk to our people," said Gerald. Historically, additional protection involves an individual positioned at a signal, placing a red flag or red light and detonators on the railway.

"So we embraced technology to get past these issues."

The solution

That's when Gerald turned to a track circuit operating device (TCOD) – the ZKL 3000 RC – which is pre-installed and remotely-operated. The system can be switched remotely, removing the need to enter the four-foot to place or remove protection once installed.

"It's a piece of kit that's satellite enabled, so we can press a button to activate a track circuit, which turns a signal to red, meaning a train can't run through."

Network Rail had this equipment originally as non-remote versions. LNE & EM had 10 that were sat on the shelf, so rather than buying new ones Gerald upgraded them and had them converted for remote usage.

"This was only possible because Infrastructure Projects Signalling Northern embraced the use of technology and funded the conversion," he said.

The benefits

For the project, the key benefit was safety to colleagues but there was a significant cost saving, too.

"There are three reasons we use these: safety, capacity and efficiency," said Gerald. "The technology means that track workers no longer have to spend time in the four-foot to install safety measures.

"The kit can be deployed during the day at the signaller's discretion and it has a battery pack that lasts for two months. There's more efficiency in the process; we don't have the multiple calls to the signaller, the person putting the protection in place and the team carrying out the work.

"The Office of Rail and Road (ORR) came to see us work with the kit and they couldn't understand why it's not business as usual everywhere, especially when you look at the savings and safety benefits.

"It helped us gain, on average, 60 minutes a night, which meant seven hours a week on the project. We reduced the number of shifts required to carry out the work and the people-hours.

"Ultimately, we want to get more time on track and do more work between trains.

"We're now using this as a protection method for all line blockages and will continue to do so for the life of the scheme." ■



FAST FACTS

- Increased working/production time by 26 per cent
- Gained 60 minutes working time per shift
- Reduced miles travelled by colleagues by 22,402
- Reduced the number of times colleagues had to enter the four-foot by 694 times
- Reduced CO₂ emissions by 4,772kg
- Saved £479,769

"The operator of the TCODs can go to the signal box and talk to the signaller in person. They can ask for a line blockage using the TCODs and operate it from the signal box. The operator knows it's being done, the signaller can see it being done because it's indicated on their panel and it speeds up the whole process."

Derek King, local operations manager



TERMS EXPLAINED

A line blockade is where one line can be blocked and the other can remain open; a possession is where trains are stopped so people can work on track with machines.